

PELTONEN et al
Serial No. 09/757,479
May 13, 2003

IN THE CLAIMS

The following claim set replaces all prior versions, and listings, of claims in the application:

1-23 (CANCELED)

24. (PRESENTLY AMENDED) Apparatus for mixing a fluid medium with a solids-liquid suspension, comprising:

a mixer casing having an inlet attached by a flange to inlet piping, and an outlet, and defining a flow axis between said inlet and outlet;

a conduit provided in one of said inlet piping and said mixer casing for feeding the fluid medium into said casing or inlet piping; and

a rotor freely rotatably mounted in said casing for free rotation about an axis of rotation which is transverse to said flow axis, said rotor having a center, a shaft mounted on bearings in said casing, and blades which leave said rotor center open and thereby allow for flow of the solids-liquid suspension therethrough.

25. (PREVIOUSLY SUBMITTED) Apparatus as recited in claim 24, wherein said inlet is provided with at least one throttling member which throttles the flow of fluid into said casing.

26. (PREVIOUSLY SUBMITTED) Apparatus as recited in claim 25, wherein said throttling member comprises at least one rib mounted in the vicinity of said inlet in said casing for causing the mass center of the flow of fluid entering said casing to deviate from flow centered on said axis of rotation.

27. (PREVIOUSLY SUBMITTED) Apparatus as recited in claim 25, wherein said throttling member comprises a valve mounted in the vicinity of said inlet for causing the

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mass center of the flow of fluid entering said casing to deviate from flow centered on said axis of rotation.

28. (PREVIOUSLY SUBMITTED) Apparatus as recited in claim 27, wherein said valve comprises part of said casing, or is attached to said inlet flange of said casing, or comprises part of said inlet piping.

29. (PREVIOUSLY SUBMITTED) Apparatus as recited in claim 24, further comprising at least one stationary mixing member disposed within said casing.

30. (PREVIOUSLY SUBMITTED) Apparatus as recited in claim 29, wherein said at least one stationary mixing member is mounted at least 90 degrees from said outlet opposite the direction of rotation of said rotor.

31. (PREVIOUSLY SUBMITTED) Apparatus as recited in claim 29, wherein said stationary mixing member comprises a rib attached to a wall of said casing.

32. (PREVIOUSLY AMENDED) Apparatus as recited in claim 24, wherein said outlet includes an outlet pipe which recovers dynamic pressure from the flow of mixed suspension.

33. (CANCELED)

34. (PREVIOUSLY SUBMITTED) Apparatus as recited in claim 24, wherein said inlet and outlet are disposed with respect to each other so that the direction of flow of fluid changes at most about 100 degrees from said inlet to said outlet.

35. (PREVIOUSLY SUBMITTED) Apparatus as recited in claim 24, wherein said outlet is tangential to the direction of rotation of said rotor.

36. (PREVIOUSLY SUBMITTED) Apparatus as recited in claim 24, wherein said conduit feeds the fluid medium and a solids-liquid suspension into said casing or inlet

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piping, and wherein said rotor includes mixing blades which are contacted by the fluid medium and solids-liquid suspension introduced by said conduit so that rotation of the mixing rotor is effected.

37. (PRESENTLY AMENDED) Apparatus for mixing a fluid medium with a solids-liquid suspension, comprising:

a mixer casing defining an interior space and having an inlet for introduction of a mass flow of material which includes the solids-liquid suspension into said interior space, and an outlet for discharging a mixture of the fluid medium and solids-liquid suspension from said interior space;

a conduit for feeding the fluid medium into contact with the solids-liquid suspension; and

a mixing rotor freely rotatably mounted in said casing for free rotation about an axis of rotation, said axis of rotation being transverse to an axis of flow leading from said inlet to said outlet; wherein said mixing rotor including a center, a shaft mounted on bearings in said casing, and blades, said blades leaving said rotor center open for the solids-liquid suspension and the fluid to enter and being positioned for contact with the fluid medium and solids liquid suspension introduced into the mixer casing to thereby responsively cause the mixing rotor to rotate and mix the fluid medium with the solids liquid suspension.

38-39 (Canceled)

40. (PREVIOUSLY AMENDED) Apparatus as in claim 37, wherein the conduit introduces the fluid medium directly into an interior space of said mixer casing.

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41. (PREVIOUSLY AMENDED) Apparatus as in claim 37, wherein said inlet includes inlet piping for the mass flow of material, and wherein said conduit introduces the fluid medium into the inlet piping.

42. (PREVIOUSLY AMENDED) Apparatus as recited in claim 37, wherein said inlet is provided with at least one throttling member which throttles the mass flow of material into said casing.

43. (PREVIOUSLY SUBMITTED) Apparatus as recited in claim 42, wherein said throttling member comprises at least one rib mounted in the vicinity of said inlet in said casing for causing a mass center of the mass flow of material entering said casing to deviate from flow centered on said axis of rotation.

44. (PREVIOUSLY SUBMITTED) Apparatus as recited in claim 42, wherein said throttling member comprises a valve mounted in the vicinity of said inlet for causing a mass center of the mass flow of material entering said casing to deviate from flow centered on said axis of rotation.

45. (PREVIOUSLY SUBMITTED) Apparatus as recited in claim 44, wherein said valve comprises a part of said casing.

46. (PREVIOUSLY SUBMITTED) Apparatus as recited in claim 44, wherein said inlet includes inlet piping for the mass flow of material, and wherein said throttling member comprises a valve mounted in the vicinity of said inlet piping.

47. (PREVIOUSLY AMENDED) Apparatus as recited in claim 37, further comprising at least one stationary mixing member disposed within said casing.

48. (PREVIOUSLY SUBMITTED) Apparatus as recited in claim 47, wherein said at least one stationary mixing member is mounted at least 90 degrees from said outlet opposite a direction of rotation of said rotor.

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49. (PREVIOUSLY SUBMITTED) Apparatus as recited in claim 47, wherein said stationary mixing member comprises a rib attached to a wall of said casing.

50. (PREVIOUSLY AMENDED) Apparatus as recited in claim 37, wherein said outlet includes an outlet pipe which recovers dynamic pressure from the flow of mixed suspension..

51. (CANCELED)

52. (PREVIOUSLY AMENDED) Apparatus as recited in claim 37, wherein said inlet and outlet are disposed with respect to each other so that direction of fluid flow changes at most about 100 degrees from said inlet to said outlet.

53. (PREVIOUSLY AMENDED) Apparatus as recited in claim 37, wherein said outlet is tangential to the direction of rotation of said rotor.